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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/380,312	08/31/1999	Masanori Minamio	JEL-30763-PC	2451

7590

07/17/2002

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EXAMINER

CRUZ, LOURDES C

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/380,312

Applicant(s)

MINAMIO ET AL.

Examiner

Lourdes C. Cruz

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, 7 and 9 is/are allowed.
- 6) ☒ Claim(s) 4, 5 and 8 is/are rejected.
- 7) ☒ Claim(s) 3, 6 and 10-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 22 April 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The Figures showing cross sectional views of the claimed invention are improperly crosshatched. All of the cross hatching patterns should be selected from those shown on page 600-81 of the MPEP based on the material of the part. Also see 35 CFR 184 (h)(3) and MPEP 608.02.

Claim Objections

Claims 3,6, and 10 are objected to because of the following informalities:

Claim 3 recites "between said groove portions". It is suggested that between be substituted for "adjacent" in order to make the claim clearer. Also, in order to accomplish clarity and to make the scope of the claim clear, the last part of the claim should recite "is contacted *by said connecting portion* is flat"

Claims 6 and 10 should also recite "adjacent" for the same reasons given above (see objections to claim 3).

Also regarding claim 10, "disposed in" should be substituted for "disposed at"

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Morihiro (JP 02201946).

Morihiro teaches a resin molded semiconductor device comprising a chip 1 mounted on a die pad portion 2 of a lead frame; wires 3 connecting the terminals to inner lead portions of the lead frame; a sealing resin 8 which seals an outer peripheral region of the chip, said region including a wire region of the upper face of the chip, and a lower region of said die pad portion; and outer lead portions arranged in a bottom face region of said sealing resin, wherein said die pad portion is located higher than the inner lead portions.

Regarding claim 8, see that Morihiro's device has leads that will inherently be exposed from the sealing in order to pin the device to a substrate.

See that the die portion of the prior art is smaller in size than the chip (see that "die portion" is interpreted as any portion smaller than the chip).

See that the frame of Mohiro is upset, and that an upsetting process has inherently been performed on the frame.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morihiro in view of Kanji (JP 04155854).

Morihiro discloses the resin molded type device as discussed above. However, the prior art fails to disclose:

- At least one groove portion in a surface of each inner lead portion Said thin wire being disposed on a side of said inner lead portion between said groove portions
- A widened portion formed in each inner lead portion (**Claim 4**)
- A widened portion formed in each of said inner lead portions and at least one groove portion is formed in a surface (**Claim 5**)

- A widened portion formed in each of said inner lead portions, a plurality of groove portions formed in a surface, and connecting portions are disposed between said groove portions
- See that an area to which the wire is connected to is flat

Kanji teaches leads 1b with grooves 7, and a wire connected between said grooves.

Morihiro fails to teach at least one groove portion in a surface of each inner lead portion. However, Kanji does. It would be obvious to integrate at least a groove in a surface of each inner lead portion in order to provide the lead with an uneven surface easier to localize in the bonding process

Morihiro fails to teach said thin wire being disposed on a side of said inner lead portion between said groove portions. However, Kanji does. It would be obvious to dispose wires on a side of said inner lead portion between said groove portions in since leads with an uneven surface makes easier to localize the bonding portion in the bonding process.

Also see that leads have a **wider** portion where grooves do not exist that where they are present as an obvious result of having grooves present (**Claims 4 and 5**).

Allowable Subject Matter

Claims 1,2,7 and 9 are allowed. Claims 3,6 and 10-15 contain allowable subject matter, but should be amended to overcome the objections above.

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new grounds of rejection above. See that the examiner inadvertently listed the Kanji reference by its Application number, instead of by the Publication number.

Find new rejection above, with the right Publication number.

Regarding the rejection of claim 8 in view of Mihiro, see that Mohiro discloses an upset frame, and that Applicant has stated in the remarks that upsetting processes are known in the art.

See that for claims 4 and 5 the directions in which the leads have wider portions are not distinguished from the portions under the grooves and adjacent the grooves disclosed by the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 703-306-5691. The examiner can normally be reached on M-F 8:00- 4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Application/Control Number: 09/380,312
Art Unit: 2827

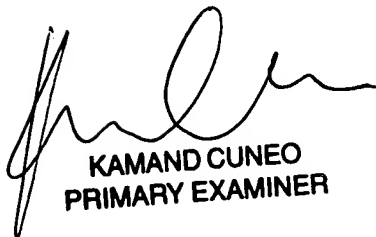
Page 7

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Lourdes C. Cruz
Examiner
Art Unit 2815



Lourdes Cruz
July 14, 2002



KAMAND CUNEO
PRIMARY EXAMINER